MULTIMEDIA UNIVERSITY

STUDENT ID NO

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FINAL EXAMINATION

TRIMESTER 1, 2022 / 2023

BSH3044 – OCCUPATIONAL SAFETY AND HEALTH

(All sections / Groups)

22 NOVEMBER 2022
9.00am – 11.00am
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **FOUR** pages with **TWO** sections only.
2. Section A: **ONE** Case Study. Attempt **ALL** questions.
   Section B: **FOUR** Structural Questions. Attempt **THREE** questions only.
3. Please write all your answers in the answer booklet provided.

SECTION A: CASE STUDY (40 marks)

Illegal Toxic Waste Dumps Could Be Responsible for Latest Pasir Gudang Air Pollution

The authorities should look into the possibility of gases being released from illegal toxic waste dumpsites, besides monitoring discharge from factories and the surrounding areas in Pasir Gudang, Johor, says a toxicologist. Dr Mustafa Ali Mohd said the possibility of people dumping and burying liquid or solid waste material should be considered since the authorities could not figure out the reason for some 127 students and three teachers from 15 schools experiencing symptoms on Sunday (June 30), the day schools in the area reopened.

"Chemicals could be coming from the ground because some parties may have dumped and buried toxic waste in the ground, which can be emitting the gases," he said in an interview. As such, Dr Mustafa, who is also a Fellow at the Academy of Sciences Malaysia, said the authorities should look at clear empty grounds where such illegal dumping could occur. All kindergartens, schools and institutions of higher learning in Taman Mawar, Pasir Gudang, were ordered to close from Sunday (June 23) until Thursday (June 27) after students suffered breathing difficulties and vomiting. The incident began on June 20 after 15 students from Sekolah Agama Taman Mawar in Pasir Gudang suffered breathing difficulties and vomiting.

Mustafa also said the use of gas detectors in schools as proposed by the Pasir Gudang MP Hassan Abdul Karim would not be the best method currently, as it needed quite a lot of gas for the alarm to be triggered, like smoke detectors. "Routine air monitoring, which uses air pumps to pump air through a small pipe and trap chemicals passing through it from the air, is more useful as it is able to detect gases more sensitively compared with gas detectors. "The air samplers can be placed around the factory areas too. It makes it easier for enforcement personnel to trace the source of pollution," he said.

On Monday (July 1), Hassan was reported to have asked chemical companies, factories and NGOs to come forward and provide gas detectors at schools around Pasir Gudang as the government teams were already stretched trying to pinpoint the location of chemical pollution in the area. Mustafa said that routine air monitoring was essential to ensure no trace quantities of toxic gases accumulated in the bodies of people living in industrial areas. "They should be detected at lower levels because this is the only way to prevent chronic exposures," he said.

Continued.....

Besides monitoring and treating sudden acute exposure of gases or chemicals in high quantity, which might cause breathing difficulties, chronic exposure from prolonged, small doses of toxic gases also needed to be monitored and studied because the chemicals could be retained in the fat and cause health problems after a certain threshold, he said. Mustafa said it was more important to carry out routine checks on water and the air particularly in industrial areas because if toxic gasses were detected, the authorities could take action before the gases reach the population. "They will also know which factory or factories the gases come from," he said. Mustafa said that doing random and frequent air and water sampling was more practical and likely cheaper than the cost of evacuating the victims and cleaning the environment.

(Adapted from:
https://www.thestar.com.my/news/nation/2019/07/04/illegal-toxic-waste-dumps-could-be-responsible-for-latest-pasir-gudang-air-pollution-says-academic#qkJ70jrtKlBREdK8.99)

QUESTION

(a) Based from the case above, explain any **TWO (2)** implications that have been caused due to illegal toxic dumps.

(10 marks)

(b) As a future safety and health officer, you will need to design **FIVE (5)** important steps in implementing hazard control methods for containing toxic waste.

(20 marks)

(c) Discuss **FIVE (5)** ways which factories in Pasir Gudang can implement in eliminating toxic waste in the future?

(10 marks)

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SECTION B: STRUCTURED QUESTIONS (60 marks)
Choose THREE (3) questions only.

QUESTION 1

An important part of the ergonomic process is a periodic review of the facility, specific workstation designs and work practices, and the overall production process, from an ergonomics perspective.

Discuss **FIVE (5)** ways managers can do in identifying ergonomic problems.

(20 marks)

QUESTION 2

Industrial hygiene is the science of anticipating, recognizing, evaluating, and controlling workplace conditions that may cause workers' injury or illness. Industrial hygienists use environmental monitoring and analytical methods to detect the extent of worker exposure and employ engineering, work practice controls, and other methods to control potential health hazards.

Elaborate **FIVE (5)** common types of airborne contaminants.

(20 marks)

QUESTION 3

Workplace stress involves the emotional state resulting from a perceived difference between the level of occupational demand and a person's ability to cope with this demand.

Discuss **FIVE (5)** options that managers can do to reduce stress among workers.

(20 marks)

Continued.....

QUESTION 4

One of the best ways to promote safety is to design it into the tools, machines, and technologies with which people interact in the workplace. Safety committees are one of the ways in providing a formal structure through which employees & management can funnel concerns & suggestions about safety/health issues.

(a) Discuss **FIVE (5)** Do's and **FIVE (5)** Don'ts that must be applied to all safety committees.

(10 marks)

(b) From your opinion, how persuasion skills can be one of the effective tools in promoting safety among workers?

(10 marks)
(Total: 20 marks)

End of Paper